

## A CONSTITUTIVELY ACTIVE PHOSPHATIDYLINOSITOL 3-KINASE

## ABSTRACT OF THE DISCLOSURE

The invention provides a method of producing a constitutively active phosphatidylinositol 3-kinase (PI 3-kinase) comprising the catalytic p110 subunit covalently attached at the N-terminus to the iSH2 region of the regulatory subunit, p85. The invention discloses one form of the constitutively active kinase, p110\*, which functions independently of growth factor stimulation. Expression vectors encoding a constitutively active PI 3-kinase and cells containing such expression vectors are provided. The invention also provides methods of using the constitutively active phosphatidylinositol 3-kinase to generate phosphoinositides, to identify cellular target proteins and associating molecules of PI 3-kinase, to screen for inhibitors of PI 3-kinase activity and to treat certain diseases, in particular, proliferative diseases. Kits comprising the constitutively active kinase are also provided.